

VASIL'YEV, V.N.

A district goes over to the year-round raising of chicks. Ptitssevodstvo
8 no.12:8-9 D '58. (MIRA 11:12)

1. Sekretar' Dubossarskogo raykoma Kommunisticheskoy Partii Moldavii.
(Dubossary District--Poultry breeding)

VASIL' YEV, V.N.

Eighty centners of poultry meat per hundred hectares of grain crops. Zhivotnovodstvo 21 no.4:3-8 Ap '59. (MIRA 12:5)

1. Sekretar' Dubossarskogo rayonnogo komiteta Kommunisticheskoy partii Moldavii.

(Dubossary District--Poultry)

VASIL'YEV, V.N., Geroy Sotsialisticheskogo Truda

Reducing the cost of poultry produce on the "Krasnyi kut" Collective
Farm. Ptitsevodstvo 9 no.4:8-11 Ap '59. (MIRA 12:6)

1.Direktor sovkhoza "Krasnyy Kut", Saratovskoy oblasti.
(Poultry)

ARCHAKOV, B.G.; VASIL'YEV, V.N.; NEUSTROYEV, V.D.; POLOZOV, A.I.;
PREOBRAZHENSKIY, A.A.

Comparative data on the determination of the concentration of the
smallpox vaccine virus by titration in chicken embryos and tissue
cultures. Vop.virus. 7 no.6:731-734 N-D '62. (MIRA 16:4)
(VACCINES) (SMALLPOX)

YACIL'EV, N.S.

Belula pubescens Linn. and Belula pubescens Linn. Bot. Bot. 1931. 17
no. 122 1931 1931 1931 (1931 13:1)

1. Botanicheskii Institut imeni Komarova ul. 1931, Leningrad.

KRAVCHENKO, A.T.; VASIL'YEV, V.N.

Comparative study of the properties of two strains of the virus tick encephalitis in tissue culture. Report No. 1: Conditions for cultivating the virus of tick encephalitis in tissue culture Vop. virus. 5 no. 6:649-653 N-D '60. (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva. (ENCEPHALITIS) (TISSUE CULTURE)

(Article submitted "Dec 59)

KRAVCHENKO, A.T.; VASIL'YEV, V.N.

Comparative study of the properties of two strains of tick encephalitis virus in tissue culture. Report No. 2: Properties of strains of tick encephalitis virus after prolonged cultivation in tissue culture. Vop. virus. 7 no. 1:10-13 Ja-F '61. (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.
(ENCEPHALITIS)

GADZHIYEV, S.A., prof. (Leningrad, ul. Frunze, d.1, kv.5); VORONOV, A.A.:
VASIL'YEV, V.N.

Some problems of perfusion in artificial blood circulation. Vest.
khir. 90 no.2:31-35 F'63. (MIRA 16:7)

1. Iz kafedry grudnoy khirurgii i anesteziologii (zav. - prof.
S.A.Gadzhiev) Leningradskogo ordena Lenina instituta usover-
shenstvovaniya vrachey imeni Kirova.
(PERFUSION PUMP (HEART))

PSCHENICHNYY, I.P.; SHTEYGARDT, Yu.N.; MESHCHERYAKOV, A.V.; VASIL'YEV, V.N.;
SOKOLOVA, E.F.; BROVKOVICH, E.D.; RUBANOVSKIY, B.R.; LUR'YE, R.G.;
PARAKHONYUK, Z.M.; GOROKHOVSKIY, B.I.; ZHDANOV, V.S.; GORBUNOVA, Z.V.
GLIKIN, M.I.; TAVAR'YAN, E.A.; SUKHODOLYA, Ye.I.

Abstracts. Kardiologiya 4 no.4:87-90 J1-Ag ' 64. (MIRA 19:1)

VASIL'YEV, V.N. (Leningrad, K-196, Zanevskiy prospekt, d.1/82, kv.161)

Significance of certain indices of the adequacy of perfusion
in artificial circulation. Grud. khir. 6 no.1:50-57 Ja-F '64.
(MIRA 18:11)

1. Kafedra grudnoy khirurgii i anesteziiologii (sav. - prof.
S.A. Gadzhiyev) Instituta usovershenstvovaniya vrachey imeni
Kirova, Leningrad. Submitted February 12, 1962.

VASIL'YEV, V.N.; NEUSTROYEV, V.D.; POLOZOV, A.I.; TERESHCHENKO, M.O.;
SHCHETININ, V.P.

Some problems in humoral smallpox immunity. Zhur. mikrobiol.,
epid. i imm. 41 no. 2:5-10 F '64. (MIRA 17:9)

GADZHIYEV, S.A.; VORENOV, A.A.; VASILEYEV, V.N.

Artificial blood circulation in surgery on the open heart.
Azerb. med. zhur. 41 no. 10:29-35 1964 (NIRA 1964)

1. Iz kafedry grudnoy khirurgii (zav. - prof. S.A. Gadzhiev)
Leningradskogo Gosudarstvennogo instituta dlya usovershenstvova-
niya vrachey imeni Kirova.

GADZHIYEV, S.A., prof.; VASIL'YEV, V.N.

Esophageal diverticula and their surgical treatment. Vest. khir. 93
no.8:41-46 Ag '64. (MIRA 18:7)

1. Iz kafedry grudnoy khirurgii i anesteziologii (zav. - prof.
S.A.Gadzhiyev) Leningradskogo ordena Lenina instituta usover-
shenstvovaniya vrachey imeni Kirova.

CHISTOV, Aleksandr Aleksandrovich; VASIL'YEV, V.M., red.; SKONECHNAYA,
A.D., red.; KLYUCHEVA, T.D., tekhn.red.

[Work and live the communist way] Rabotat' i zhit' po kommu-
nisticheski. Moskva, Izd-vo "Sovetskaya Rossiya," 1960. 28 p.
(Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh shkol
i kruzhkov. Tema 7). (MIRA 14:2)
(Agricultural laborers)

KLADCHIKOV, Sergey Mikhaylovich; VASIL'YEV, V.N., red.; KOLOMIYTSOVA,
O.I., red.; KLYUCHEVA, T.D., tekhn.red.

[Reducing production costs is a source for increasing the national
wealth] Snizhenie sebestoimosti produktov - istochnik rosta
obshchestvennogo bogatstva. Moskva, Izd-vo "Sovetskaya Rossiya,"
1960. 30 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh
shkol i kruzhek. Tema 6).

(Costs, Industrial)

(MIRA 14:2)

MITROKHIN, Mikhail Alekseyevich; IVIN, Ivan Andreyevich; VASIL'YEV,
V.N., red.; DMITRIYEVA, L.A., red.; KLYUCHEVA, T.D., tekhn.
red.

[Worknorms and wages on collective and state farms] Normiro-
vanie i oplata truda v kolkhozakh i sovkhovakh. Moskva, Izd-
vo "Sovetskaya Rossiya," 1960. 33 p. (Dlia slushatelei sel'-
skikh nachal'nykh ekonomicheskikh shkol i kruzhkov; ~~tema~~ 5)
(MIRA 15:1)

(Agricultural wages)

SELEZNEV, Fedor Yakovlevich; VASIL'YEV, V.N., red.; VISHNYAKOVA, Ye.A.,
red.; KUZNETSOVA, G.I., tekhn. red.

[Agricultural planning] Planirovanie sel'skokhoziaistvennogo
proizvodstva. Moskva, Izd-vo "Sovetskaya Rossiya." 1960.
36 p. (Dlia slushatelei sel'skikh nachal'nykh shkol i kruzh-
kov. Tema 2) (MIRA 14:5)

(Agriculture)

GLUKHOV, Anatoliy Aleksandrovich; VASIL'YEV, V.N., red.; DROKHANOVA, Ye.N., red.; KLYUCHEVA, T.D., tekhn. red.

[Increasing labor productivity is the path to abundance] Povyshenie proizvoditel'nosti truda - put' k izobiliiu. Moskva, Izd-vo "Sovetskaia Rossiia," 1960. 37 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh shkol i kruzhek. Tema no.4)
(MIRA 15:1)

(Agriculture—Labor productivity)

POPOV, Ivan Mikhaylovich; VASIL'YEV, V.N., rad.; DROKHANOVA, Ye.N., red.;
KUZNETSOVA, G.I., tekhn.red.

[Ways for a better use of production funds on collective and
state farms] Puti luchshego ispol'zovaniia proizvodstvennykh
fondov kolkhozov i sovkhov. Moskva, Izd-vo "Sovetskaya Rossiya,"
1960. 38 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh shkol i krushkov. Tom 3)

(MIRA 14:1)

(Agricultural administration)

VASIL'YEV, V.N.

First coordinating conference on the problem of labor productivity
increase potentials and the use of labor resources in the national
economy of Siberia and the Far East. Izv.Sib.otd.AN SSSR no.2:
120-121 '60. (MIRA 13:6)
(Siberia--Labor and laboring classes)

VASIL'YEV, V.N.; MOTOV, S.M.; RUMYANTSEV, A.F., otv. red.; VEYSBISH, S.M.,
red.

[Economics of socialist agricultural enterprises; visual aids]
Ekonomika sotsialisticheskikh sel'skokhoziaistvennykh pred-
priiatii; nagliadnye posobiia. Moskva, Gos. izd-vo polit. lit-
ry, 1961. 1 v. plates. (MIRA 14:8)
(Agriculture—Audio-visual aids)

GUK, Mikhail Mikhailovich; VASIL'YEV, V.N., red.; NAUMOV, K.M.,
tekhn. red.

[Organization of animal husbandry on collective and
state farms] Organizatsiia zhivotnovodstva v kolkhozakh
i sovkhozakh. Moskva, Izd-vo VPSH i AON, 1962. 108 p.
(MIRA 17:1)

ABRAMOV, V.A.; RUMYANTSEV, A.F.; CHAYKIN, P.I.; ABATURIN, L.V.;
GAVRILOV, V.I.; ALTAYSKIY, I.P.; KAMINSKIY, A.Ye.; SUKACH,
P.V.; VASIL'YEV, V.N.; OBOLENSKIY, K.P.; SAVEL'YEV, Ye.A.;
MOTOV, S.I.; RUSAKOV, G.K.; IVANOV, F.G.; PISKUNOV, V.,
red.; POLYAKOVA, L., red.; MUKHIN, Yu., tekhn. red.

[Economics of agricultural enterprises; textbook] Ekonomika
sel'skokhoziaistvennykh predpriyatii; uchebnoe posobie. Mo-
skva, Gospolitizdat, 1962. 510 p. (MIRA 15:9)

1. Kommunisticheskaya partiya Sovetskogo Soyuz. Vysshaya
partiynaya shkola.
(Farm management)

IVANOV, Fedor Gerasimovich; VASIL'YEV, V.N., red.; NAUMOV, K.M.,
tekhn. red.

[Working assets of collective farms] Oborotnye sredstva
kolkhozov. Moskva, Izd-vo VPSH i AON, 1963. 54 p.
(MIRA 16:12)

(Collective farms--Finance)

ABRAMOV, V.O., nauchn. sotr.; CHAYKIN, O.F., nauchn. sotr.;
 ABATURIN, L.V., nauchn. sotr.; GAVRILOV, V.I. [Havrylov,
 V.I.], nauchn. sotr.; ALTAYSKIY, I.P. [Altais'kiy, I.P.],
 nauchn. sotr.; KAMINSKIY, O.IE. [Kamins'kiy, O.IE.],
 nauchn. sotr.; RUMYANTSEV, O.IE., nauchn. sotr.;
 SUKACH, P.V., nauchn. sotr.; VASIL'YEV, V.M. [Vasyl'iev,
 V.M.], nauchn. sotr.; KOTOV, G.G. [Kotov, H.H.], nauchn.
 sotr.; OBOLENSKIY, K.P. [Obolens'kiy, K.P.], nauchn. sotr.;
 SAVEL'YEV, Ye.O. [Savel'iev, IE.O.], nauchn. sotr.; MOTOV,
 S.I., nauchn. sotr.; RUSAKOV, G.K. [Rusakov, H.K.], nauchn.
 sotr.; YEVDOKIMENKO, V.P. [IEvdokymenko, V.P.], red.;
 SKVIRSKAYA, M.P. [Skvyrs'ka, M.P.], tekhn. red.

[Economics of agricultural enterprises] Ekonomika sil'sko-
 khospodars'kykh pidpriemstv; navchal'nyi posibnyk. Kyiv,
 Derzhpolitydav URSR, 1963. 469 p. (MIRA 16:10)

1. Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya
 partiynaya shkola.

(Agriculture—Economic aspects)

VASIL'YEV, V.N.; SLOBODENYUK, G.I.; TRIFONOV, V.I.; KHOTUNTSEV,
Yu.L.; MIGULIN, V.V., red.; MASHAROVA, V.G., red.

[Regenerative transistorized parametric amplifiers;
problems of theory and design] Regenerativnye poluprovod-
nikovye parametricheskie usiliteli; nekotorye voprosy
teorii i rascheta. Moskva, Sovetskoe radio, 1965. 447 p.
(MIRA 18:8)

VASIL'EV, V.N., inzh.

Problems in the automation of cutting-tool exchange during
multitool machining. Izv.vys.ucheb.zav.; mashinostr. no.9:
76-84 '62. (MIRA 6:2)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche ime
Baumana.

(Automation)

(Metal cutting)

ROZHKOV, V.A.; VASIL'YEV, V.N.

Use of digital computers for the approximation of discrete fields.
Trudy GOIN no.86:112-123 '65. (MIRA 18:9)

VASIL'EV, V.N.

Dust-removal

Local dust collectors and removal of emery dust from grinding tools. Fig. 1 san.
No.2, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED.

VASHNIN, V.A. slesar'; VASIL'YEV, V.N. slesar'; GRINKEVICH, S.Z.,
slesar'

Eccentric clamp. Suggested by V.A.Vashnin, V.N.Vasil'ev, S.Z.Grinkevich.
Rats.1 izobr.v stroi. no.9:15-17 '59. (MIRA 13:1)

1. Po materialam tresta No.5 Ministerstva stroitel'stva BSSR.
(Reinforced concrete)

VASIL'YEV, V.N.

VASIL'YEV, V.N.

Some unsolved problems in the operation of rural pharmacies. Apt.delo
6 no.6:45-46 N-D '57. (MIRA 10:12)

1. Upravlyayushchiy Yal'chikskoy aptekoy Chuvashskogo otdeleniya
Glavnogo aptechnogo upravleniya.
(YAL'CHIKI--DRUGSTORES)

TREBIN, G.F.; KAPYRIN, Yu.V.; VASIL'YEV, V.N.

Thermograph with contact temperature-sensitive element for
investigating wells. Nefteprom. delo no.7:33-36 '64.
(MIRA 17:8)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

1. The following information is being furnished to you for your information:

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BELINSKIY, B.A.; VASIL'YEV, V.N.; KAREVSKIY, V.A.; SAVINIKHINA, A.V.

Ultrasonic device for determining certain standard parameters of
reservoir oils. Prim. ul'traakust. k issl. veshch. no.14:171-184
'61. (MIRA 14:12)
(Petroleum) (Petroleum products) (Ultrasonic testing)

S/109/63/008/002/025/028
D266/D308

AUTHOR: Vasil'yev, V.N.

TITLE: Calculation of the input waveguide section of a parametric amplifier with two discontinuities

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 2, 1963, 347-348

TEXT: Assuming the incident wave in the form $E_{inc} = C e^{-i\gamma x}$ and calculating the reflection coefficient at the point $x = -1$ it is found that the parameters determining the behavior are

$$1' = 1 + \frac{\varphi_1}{2\gamma}; \quad d' = d + \frac{\varphi_1 + \varphi_2}{2\gamma} \quad (3)$$

Choosing these parameters in the form

$$1' = \frac{\lambda_0}{4} (2n + 1), \quad d' = \frac{\lambda_0}{4} (2m + 1)$$

(where m, n - integers, λ_0 - wavelength) it is shown that for small

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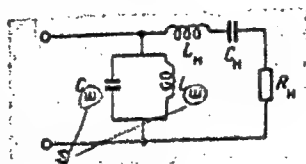
S/109/63/008/002/025/028
D266/D308

Calculation of the input ...

reflections the two discontinuities are equivalent to the circuit shown in Fig. 2. If R_H , $\sqrt{L_H/C_H}$ and $\sqrt{C_S/L_S}$ are given the characteristic impedance of the transmission line and both reflection coefficients can be determined. The solution is obtained with the aid of an iterative procedure choosing first $l'/l = 1$ and $d'/d = 1$. The values of n and m can be independently chosen. There are 2 figures.

SUBMITTED: February 20, 1962 (initially)
August 4, 1962 (after revision)

Fig. 2



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S/194/62/000/005/089/157
D222/D309

AUTHORS: Belinskiy, B.A., Vasil'yev, V.N., Karevskiy, V.A., and Savinikhina, A.V.

TITLE: Ultrasound device for the measurement of some standard parameters of stratified liquids

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-5-49 shch (V sb. Primeneniye ul'traakust. k issled. veshchestva, no. 14, M., 1961, 171 - 184)

TEXT: A small-sized ultrasound device is described, which is suitable for investigations related to the measurement of absorption and velocity of propagation of ultrasound oscillations under extremely varied physico-chemical conditions, in particular those relating to oil and oil products. The block diagram and the circuit diagram of the device are given. In order to determine the saturation pressure and crystallization temperature of paraffins it is sufficient to obtain data on the attenuation of ultrasound. The device has a thermostatically controlled vessel with two transducers, a pulse generator. ✓
Card 1/2

Ultrasound device for the measurement ... S/194/62/000/005/089/157
D222/D309

tor working according to the pulsed self-modulation circuit, a super-heterodyne receiver and a cathod-ray tube indicator. The saturation pressure is determined from the appearance of gaseous phase, accompanied by a marked drop in the amplitude of the received ultrasonic impulse. The results showed a great accuracy of measurement. Experiments were carried out at 7.5 and 12.5 mc/s frequencies. [Abstractor's note: Complete translation]. ✓

Card 2/2

L 6814-65 EWG(j)/EWT(l)/EWJ(k)/EWT(n)/EPA(sp)-2/EPF(c)/EPF(n)-2/EPR/EPA(w)-2/
T/EWA/EPF(q)/FWP(b) Pr-L/Ps-L/Pu-L/Pz-L/Pab-2L/Pad/Pb-L IJP(c)/AMD/AFWL/
RAEM(a)/RAEM(t) AT/RWH/JD/HW/JG
ACCESSION NR: AP4044653

8/0048/64/028/006/1354/1359

AUTHOR: Pomazkov, V.P.; Vasil'yev, V.P.

TITLE: Determination of the free alkaline earth metal in oxide-coated cathodes by means of radioactive iodine /Report, Third All-Union Conference on Semiconductor Compounds held in Kishinev 16-21 Sep 1963/

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.6, 1964, 1354-1359

TOPIC TAGS: oxide cathode, barium work function, oxygen poisoning

ABSTRACT: The authors have previously developed a sensitive method of analyzing for free barium in oxide-coated cathodes, based on the fixation of the barium as BaI₂ by means of radioactive I¹³¹ (V.P.Vasil'yev and V.P.Pomazkov, Radiotekhnika i elektronika 2, 343, 1961; V.P.Pomazkov, Tr.Tashkentsk.gos.un-ta, Fizika No.221.136, Tashkent, 1963). In the present paper they report results of two series of tests performed in employing this procedure. In one series of experiments the quantity of free barium in a series of cathodes and on the corresponding anodes was measured, as well as the distribution of barium within the cathodes. Three different barium carbonate coatings were employed on a passive nickel base and an active alloy base.

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ACCESSION NR: AP4044653

The experimental details, including the preparation and activation of the cathodes, are described in the reference cited above. The results are discussed in terms of the theory of the cathode reaction (Rittner, 1959). The ratio of the barium on the anode to that in the cathode and the effect of the thickness and grain size of the coating confirmed Rittner's assumption that the barium penetrates the coating by means of Knudsen flow. The concentration of free barium in the coating, however, was nearly independent of distance from the base, hence the assumption that the interaction of the barium with the oxide proceeds according to Henry's law is not confirmed. The nature of the base had very little influence on the concentration of free barium in the coating. In the second series of experiments the effect of oxygen poisoning on the free barium content of triple oxide cathodes on nickel bases was investigated. The cathodes were activated by heating for 3 min each at 900, 950 and 1000°C and then operating at 850°C with an anode potential of 100 to 150 V until the work function at 600°C was between 1.7 and 1.9 eV. The vacuum was maintained during activation by means of a titanium getter, and the pressure at the end was never greater than 10^{-6} mm Hg. The cathodes were then poisoned at 600°C for 1 hour in oxygen at pressures from 5×10^{-4} to 2×10^{-7} mm Hg, and the free barium content and distribution were measured. The effect of the oxygen was to reduce the free barium content uniformly throughout the thickness of the coating. Even an oxygen pres-

L 6611-65

ACCESSION NR: AP4044653

sure as low as 5×10^{-7} mm Hg reduced the free barium content by a factor 4. The poisoned cathodes could be returned to their original condition by heating for several hours at 850°C . Orig.art.has: 3 figures and 3 tables.

ASSOCIATION: none

ENCL: 00

SUBMITTED: 00

OTHER: 003

NR REF SOV: 007

SUB CODE: EC,EM

3/3

S/0020/64/156/001/0118/0120

ACCESSION NR: AP4035815

AUTHOR: Abbasov, A. S.; Nikol'skaya, A. V.; Gerasimov, Ya. I. (Corresponding member); Vasil'yev, V. P.

TITLE: Determination of the thermodynamic properties of indium arsenide from the electromotive force measurements

SOURCE: AN SSSR. Doklady*, v. 156, no. 1, 1964, 118-120

TOPIC TAGS: electromotive force, indium arsenide, thermodynamic property, entropy, enthalpy, Gibbs free energy, thermodynamic function

ABSTRACT: Indium arsenide belongs to a group of compounds of the III_2V type. This group of semiconductors is now the subject of extensive investigations. The purpose of this work was to study the basic thermodynamic properties of InAs. This investigation of thermodynamic properties of InAs was based on the measurement of emf of the following cell

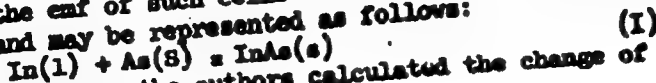
$(-)In(1)/chloride\ melt + InCl/(InAs\ As)(s)(+)$

These investigations were carried out in the 240 - 510 °C temperature interval. On the basis of a phase diagram of In-As it was concluded that electrodes of

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ACCESSION NR: AP4035815

arsenic-arsenide type, regardless of the excess amount of As, are in the two-phase region. Thus, the emf of such cells corresponds to the formation of arsenide from the components, and may be represented as follows:



Directly from emf measurements the authors calculated the change of Gibbs free energy (ΔG°) for reaction (I)

$$\Delta G = -nFE$$

where n is the charge on metal ion, ($n=1$ for In), F is the Faraday's constant equal to 23062 cal/v.g-equiv., and E is the emf in volts. The change of entropy and enthalpy of this process was calculated from the measurements of emf as a function of temperature

$$\Delta S = -d(\Delta G)/dt = nF \frac{dE}{dt}$$

$$\Delta H = \Delta G + T\Delta S$$

"The authors express their gratitude to L. Ya. Krol' and M. D. Khlystovskaya of the Institute of Rare Elements (Institute redkikh elementov) for the preparation of the indium arsenide." Orig. art. has: 1 table and 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova

Card

2/3

ACCESSION NR: AP4035815

(Moscow State University)

SUBMITTED: 17Jan64

SUB CODE: SS, IC

NO REF SOV: 008

ENCL: 00

OTHER: 006

Card

3/3

8/0020/64/156/005/1140/1142

ACCESSION NR: AP4040953

AUTHOR: Abbasov, A. S.; Nikol'skaya, A. V.; Vasil'yev, V. P.; Gerasimov, Ya. I.
(Corresponding member, AN SSSR)

TITLE: Analysis of the thermodynamic properties of gallium tellurides by electromotive force method

SOURCE: AN SSSR. Doklady*, v. 156, no. 5, 1964, 1140-1142

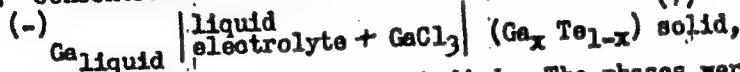
TOPIC TAGS: emf, gallium, gallium telluride, gallium telluride compound, Te, gallium mono-telluride, gallium sesquitelluride, semiconductor, gallium trichloride

ABSTRACT: The phase diagram of the system gallium-tellurium given in Khausen and Anderko's nomograph (Struktura dvoyny*kh splavov, Moscow, 1962, page 806) points out the existence of compounds of Ga_2Te_3 and $GaTe$ compositions without homogeneity intervals. They also noted that the structure of a region rich in tellurium was not fully explained. They assumed that a telluride of the composition $GaTe_3$ was formed in it. The purpose of the present paper was an analysis of the thermodynamic properties of gallium tellurides. The authors used the emf method in their analysis. The methodology of this method was described previously by A. V. Nikol'skaya et al (DAN, 130, No. 5, (1960, 1074) and by Ya. I. Gerasimov

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ACCESSION NR: AP4040953

and A. V. Nikol'skaya (Voprosy metallurgii i fiziki poluprovodnikov, Izd. AN SSSR, 1961, page 30). Concentration electrochemical chains of the type



where x is the gallium mole fraction, were studied. The phases were identified by X-ray analysis for the stoichiometric compositions as well as for transition alloys. The parameters which were found are in satisfactory agreement with those found in literature: $a=5.89$ angstrom for Ga_2Te_3 , $a=23.79$ angstrom for GaTe , $b=4.08$ angstrom, $c=10.49$ angstrom, and $\beta=45.7^\circ$. Alloys with compositions of 53.2 - 84.2 at % of Te were analyzed. Findings showed that all alloys with compositions of 63.5 to 84.2 at % of Te yielded a constant emf value within an experimental error of ± 11.0 millivolts. This indicates that the examined alloys lie in one and the same phase space. Alloys with 53.2 to 55.7 at % of Te also yielded constant values, which corresponds to the formation of the GaTe phase from Ga_2Te_3 and gallium. Equations of the form $E=A+BT$ were found for the relationship between emf and absolute temperature as the result of processing the experimental data by the least square method. The errors in the emf magnitudes and smoothing coefficients A and B , which determine the precision for calculation of temperatures and entropies, were calculated with equations of the least squares technique. Findings

Card 2/3

ACCESSION NR: AP4040953

are generalized in a table. Orig. art. has: 1 figure, 2 tables and 3 equations.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University)

SUBMITTED: 22Feb64

SUB CODE: SS, MM

NO REF SOV: 008

ENCL: 00

OTHER: 008

Card 3/3

VASIL'YEV, V.P.

Entropy characteristics of a nonideal state of electrolyte
solutions. Zhur. fiz. khim. 36 no.9:2005-2009 S '62.
(MIRA 17:6)

1. Ivanovskiy khimiko-tekhnologicheskij institut.

ACCESSION NR: AP4041405

The thermodynamic functions for the formation of GaSb from monatomic gas molecules were also calculated; $\Delta H_{298} = 68.5$ kcal/gm.atom; $\Delta S_{298} = 32.1$ electron ergs/gm.atom; $\Delta G_{298} = 59.0$ kcal/gm. atom.

Orig. art. has: 2 tables and 1 figure

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova (Moscow State University)

SUBMITTED: 22Feb64

ENCL: 01

SUB CODE: TD, IC

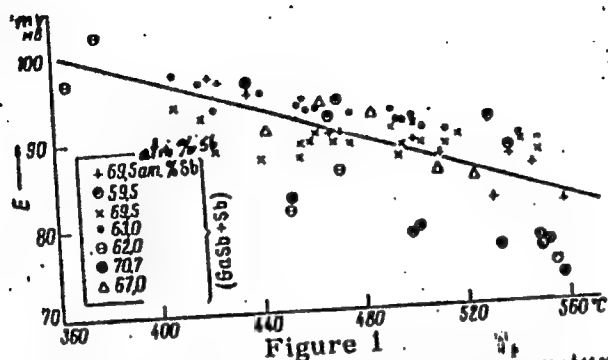
NR REF SOV: 007

OTHER: 006

Card 2/3

ACCESSION NR: 4041405

ENCLOSURE: 01



Card 3/3

BAHKOV, N.S., inzhener; VASIL'YEV, V.P., inzhener.

Automatic machine for welding fins on furnace wall tubes. Elek. sta. 24 no.
5:22-24 My '53. (MLRA 6:7)

(Electric welding) (Furnaces)

VASILYEV V. P.
Category : USSR/Optics - Physical Optics

K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2296

Author : Velichko, V.A., Vasilyev, V.P., Golosov, V.V.
Title : Measurement of Light with an Illumination Rangefinder and Determination of the Velocity of Propagation of light

Orig Pub : Geodeziya i kartografiya, 1956, No 1, 10-24

Abstract : The construction of the illumination rangefinder SVV-1 with two Kerr cells is described. The synchronously and symmetrically connected Kerr cell permits the use of the observer's eyes as the light-sensitive element, and it is the authors' opinion that this is the advantage of their instrument. The SVV-1 instrument was used to measure triangulation sides up to 10 km long. An average of 40-50 minutes was consumed in the measurement of the length of one side in 24-30 steps. The data tabulated in the article on the measured lengths of 17 sides measured with the rangefinder and by triangulation show the good agreement between the measurements. The mean-squared error of the result of measuring a side 8 km long amounts to 0.09 meters. On the basis of the measurement of the lengths of the 17 sides, obtained by triangulation, the velocity of propagation of light in vacuum was found to be $c = 299793.9 \pm 1$ km/sec.

Card : 1/1

3(4)

AUTHOR:

Vasil'yev, V. P.

SOV/154-59-1-8/19

TITLE:

The Problem of Comparative Judgment on Optical Distance Meters and Radio Distance Meters (K voprosu o sravnitel'noy otsenke svetodal'nomernoy i radiodal'nomernoy apparatury)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"- yemka, 1959, Nr 1, pp 85-90 (USSR)

ABSTRACT:

The first radio distance meter was designed in South Africa and has been called "tellurometer" by the English. The tellurometer is at first described in short here, and then the question is started whether the radio distance meters will fully suppress the optical range finders in a near future. The potential possibilities for the apparatus of both types are investigated to this end. It is shown that the accuracy of the geodimeter practically surpasses the accuracy of the tellurometer by about 3 times, while further technical improvement of the devices will hardly reduce this difference. As a summary it is stated that mainly the work connected with higher accuracy will constitute the range of application of optical range finders. The radio distance meters, however, will be used in such work where less accuracy is demanded.

Card 1/2

The Problem of Comparative Judgment on Optical
Distance Meters and Radio Distance Meters

SOV/154-59-1-8/19

For instance, where good visibility cannot be awaited or
the surveying must be done at any time of day. There are
3 references, 2 of which are Soviet.

Card 2/2

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858920009-9

VASILEV V P.

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858920009-9"

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858920009-9

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858920009-9"

VASIL'YEV, V.P.

USSR / Diffusion. Sintering.

E-6

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9332

Author : Vasil'ev, V.P., Chernomorchenko, S.G.

Title : Concerning a Procedure for Investigating Self-Diffusion of Tungsten.

Orig Pub : Zavod. laboratoriya, 1956, 22, No 6, 688-691

Anstract : On the basis of the work by V.M. Golikov and V.T. Borisov (Referat Zhurnal - Fizika, 1956, 10446), a method is proposed for measuring the coefficient of diffusion of metals with accuracy to 25 -- 30%. The method consists of coating on the specimen a thick layer of radioactive isotope and establishing with the aid of a counter the time dependence of the relative numbers of the recorded decays in the specimen before and after the diffusion annealing. Using the proposed method, the authors measured the coefficient of self-diffusion D over the range from 1290 to 1450°. $D =$

Card : 1/2

Cent. Asian State Univ in V. I. Lenin

E-6

USSR / Diffusion. Sintering.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9332

Abstract : $6.3 \times 10^7 \exp(-135,800/RT) \text{ cm}^2/\text{sec}$. The activation energy Q is within 7% of the theoretically calculated value:
 $Q_{th} = 146,000 \text{ cal/mol}$.

Card : 2/2

VASIL'EV, V.P.

CARD 1 / 2

PA - 1478

SUBJECT

USSR / PHYSICS

AUTHOR

VASIL'EV, V.P.

TITLE

Measuring of the Diffusion Coefficients by the Method of Continuous Measuring.

PERIODICAL

Dokl.Akad.Nauk, 110, fasc.1, 61-63 (1956)
Issued: 11 / 1956 reviewed: 11 / 1956

Measuring of primary activity is difficult in the case of barium, strontium, and calcium, because the preparation must be exposed to the influence of air. Therefore the author worked out a method which makes it possible to measure the diffusion coefficients in the vacuum. The method is characterized as follows: If the sample is coated with an infinitely thin layer of a radioactive substance, the following distribution of concentration applies in the case of a semi-infinite body: $C(x,t) = (C_0 / \sqrt{\pi D t}) e^{-x^2/4Dt}$. (The significance of the letters is not explained). For the integral intensity of the sample it is true that $I = I_0 e^{-z^2} (1 - \operatorname{erf} z)$, where $z = \sqrt{\mu^2 D t}$. The total intensity of the sample for the duration of diffusion heating is $E(t) = \int_0^t k I dt$, the total activity during the same interval of time, but without diffusion heating, is $E_0(t) = \int_0^t k I_0 dt$. Here k denotes a counting coefficient. The ratio of activities is: $E(t)/E_0(t) = (1/z^2) [e^{z^2} (1 - \operatorname{erf} z) + (2/\sqrt{\pi}) z - 1]$ and $E(t)/E_0(t) = 1 - (4/3\sqrt{\pi}) \mu \sqrt{D t}$ is a simplified formula for $z < 0,3$. In the case of this approximation the error remains below 1%.

Dokl.Akad.Nauk, 110, fasc.1, 61-63 (1956)

CARD 2 / 2

PA - 1478

This method was checked by the examination of the self-diffusion of silver. For this purpose, a layer of radioactive silver of 1μ thickness was steamed on in the vacuum to thin silver plates which were annealed for one hour at 850° . Each sample was then transferred to the vacuum device for diffusion annealing. The device, which was of nonex glass, is described on the basis of a drawing. Heating took place at 1010, 967, 950 and 930° K. Evaporation began beyond 1030° K. The fitting of the counter (on a water-cooled casing for reasons of heat protection) is described in short.

The weakest β -component of Ag^{110} was fully absorbed. The coefficient of the linear absorption of the β -component with 0,53 MeV was measured direct on the apparatus and amounted to 227 cm^{-1} . The kinetic curves for the self-diffusion of the silver are shown in a table. Apart from the beginning, they are nearly straight. From these data the following diffusion coefficients were determined:

Temperature in $^\circ\text{K}$	1010	967	950	930
D in cm^2/sec	$1,01 \cdot 10^{-10}$	$3,16 \cdot 10^{-11}$	$2,49 \cdot 10^{-11}$	$1,28 \cdot 10^{-11}$

By the method of the smallest squares the following temperature dependence was determined for the diffusion coefficients of silver: $D = 2,78 \exp(-48.100/RT) \text{ cm}^2/\text{sec}$. This method is well suited for vacuum examinations, investigations of the influence exercised by magnetic voltages on diffusion, etc.

INSTITUTION: Central Asiatic State University "V.I.LENIN".

VASIL'YEV, V.P.; ZAKHAROV, V.K.; CHERNOMORCZENKO, S.O.

Radioactive tracer technique for the study of metal diffusion processes in metals (applicable to the technology of oxide cathodes). Trudy SAGU no.91:17-38 '57. (MIRA 11:2)

Trudy SAGU no.91:17-38 '57.

(Diffusion) (Electron tubes)

(Diffusion) (Electron tubes)
(Radioactive tracers--Industrial applications)

68587

S/166/60/000/01/007/011

21.7100

21(1)

AUTHORS: Vasil'yev, V.P., and Moroz, V.D.

TITLE: The Investigation of the Vaporization Processes of the Oxide-Coated Cathode With the Aid of the Autoradiographic Method

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1960, Nr 1, pp 58-63 (USSR)

ABSTRACT: It is proposed to use the radioactive barium isotope Ba^{133} as an indicator for investigations of the vaporization processes of an oxide-coated cathode with the aid of the autoradiographic method. This isotope has β - and γ -radiation and its half-life is greater than 20 years. It is shown that with the aid of the autoradiography the distribution of the tagged matter on the surface of the investigated body can be found and that by photometric evaluation of the images it is possible to obtain not only qualitative but also quantitative data on the distribution of the activity on the electrodes.

There are 5 figures, and 15 references, 10 of which are Soviet, 1 French, and 4 American.

ASSOCIATION: Sredneaziatskiy gosuniversitet imeni V.I.Lenina (Central Asiatic State University imeni V.I.Lenin)

SUBMITTED: December 18, 1959
Card 1/1

VASIL'YEV, V.P.; KAMARDIN, I.F.; SHMAR'YAN, M.

Investigating the migration of electrode materials in electron tubes with oxide-coated cathodes. Izv. AN Uz. SSR. Ser.fiz.-mat. nauk no.6:53-62 '60. (MIRA 14:3)

1. Tashkentskiy gosuniversitet im. V. I. Lenina.
(Cathodes) (Electron tubes)

9.3120

S/109/60/005/07/013/024
E140/E163

AUTHORS: Shuppe, G.N., and Vasil'yev, V.P.

TITLE: The Application of Radioactive Isotopes¹⁹ to the Study of
1/ Oxide-Cathode Processes and Certain Other Problems of
Cathode Electronics

PERIODICAL: Radiotekhnika i elektronika, Vol 5, No 7, 1960,
pp 1135-1144 (+ 1 plate) (USSR)

ABSTRACT: Work carried on at the Central-Asia University and the
Tashkent vacuum-tube factory using radioactive isotopes
is described. The following problems are investigated:
evaporation of pure metal cathodes; diffusion of iron in Ni, W,
Ta and Ag; alkali-earth metal diffusion (Ca) in Ni, Ag, Au and
bronze; diffusion processes; evaporation of oxide layers and
getters in vacuum tubes; nickel migration in an oxide cathode;
barium diffusion in the cathode oxide coating. Using activity
counters and autoradiogram photographs, it is found that the
processes occurring are more complex than has been suspected and
that cathode and getter elements migrate over practically all the
other tube elements except the heater in indirectly heated tubes.
In the majority of cases industrially produced types have been

Card 1/2

117

S/109/60/005/07/013/024

E140/E163

The Application of Radioactive Isotopes to the Study of Oxide-Cathode Processes and Certain Other Problems of Cathode Electronics

used, with radioactivity induced in selected tube parts by the use of radioisotope admixtures or neutron bombardment of the part before assembly.

There are 10 figures, 3 tables and 16 Soviet references.

SUBMITTED: January 3, 1960

Card 2/2

4

33102

S/638/61/001/000/027/056

B104/B138

9,3120 (1003,1138,1160)

AUTHORS: Shuppe, G. N., Vasil'yev, V. P.

TITLE: Use of radioisotopes in certain fields of cathode electronics

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy, v. 1. Tashkent, 1961, 182 - 191

TEXT: Processes in oxide cathodes have been studied in recent years by means of tagged atoms at the Kafedra elektrofiziki TashGU (Department of Electrophysics of the Tashkent State University) and the Tashkentskiy elektrolampovoy zavod (Tashkent Electrontube Plant). The evaporation rates of tantalum and tungsten were investigated. 48.7 and 43.3 μ thick wires were enriched with Ta¹⁸² and W¹⁸⁵, pressure was 10⁻⁸ mm Hg. In the range 2070 - 2400°K, the evaporation rate of Ta was 5.9·10⁻¹² - 2.7·10⁻⁹ g/cm².sec. The evaporation rate of tungsten in the temperature range 2400 - 2800°K was between 4.5·10⁻¹⁰ and 1.1·10⁻⁷ g/cm².sec.
Card 1/3

33102
S/638/61/001/000/027/056
B104/B138

Use of radioisotopes in...

The evaporation heat of Ta was -8.02 ev/atom, that of W, -8.10 ev/atom. The diffusion of Fe in Ni, W, Ta, and Ag was studied by means of the isotope Fe^{59} . Diffusion heating was carried out in a furnace at $1 \cdot 10^3$ mm Hg. Results: The diffusion coefficient D_0 in Ni was $7.3 \cdot 10^{-4}$ cm²/sec. in W, $1.4 \cdot 10^{-2}$ cm²/sec, in Ta, 0.5 cm²/sec, and in Ag, $2 \cdot 10^{-5}$ cm²/sec. The diffusion coefficient of Ca in various metals was determined with Ca^{45} . D_0 in Ni was $2 \cdot 10^{-2}$, in Ag, $1.5 \cdot 10^{-1}$, in Au, $5.8 \cdot 10^{-6}$, in bronze (with 5% Al), $2.4 \cdot 10^{-4}$ cm²/sec. A device is described for continuous measurements during diffusion processes. A sample with a radioactive preparation on its surface is heated in vacuo. The change in intensity of radioactive radiation is measured by an end-window counter through a glass window. On a $6\Pi3C$ (6PZS) tetrode having a radioactive barium-oxide coated cathode (Ba^{140}), it was found that evaporation products precipitated on all tube parts, thus considerably changing the properties of the tube. Ni precipitates on parts of a Γ -807 (G-807) tube do not come from the oxide layer of the cathode in which Ni is also contained, they migrate through the oxide film. Conversely, substances of grids,

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33102

S/638/61/001/000/027/056

B104/B138

Use of radioisotopes in...

heat conductors, etc. also precipitate on the cathode. The application of autoradiography to investigations of oxide cathodes provides the possibility of obtaining quantitative and qualitative results regarding the distribution of the substances investigated. There are 10 figures, 3 tables, and 16 Soviet references.



Card 3/3

20591

S/109/61/006/002/023/023
E073/E335

9.3/20 (1003,1137,1140)

AUTHORS: Vasil'yev, V.P. and Pomazkov, V.P.

TITLE: Determination of Free Barium in an Oxide Cathode
by the Use of Radioactive Indicators

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol. 6, No. 2,
pp. 343 - 344

TEXT: From the point of view of the physical phenomena in an oxide cathode the determination of free barium in the oxide layer is of major interest. The methods used for this purpose hitherto were based on the reaction of water vapours with free barium and measurement of the pressure of the evolving hydrogen (Berdennikov method) or the reaction with nitrogen, etc. In recent work which was based on the Berdennikov method (Ref. 2),

a sensitivity of 1×10^{-8} g was achieved. The method proposed by the authors is based on the reaction of free barium with iodine as a result of which the relatively stable compound

BaI_2 is obtained.

The isotope I^{131} was used in the form of an aqueous solution without a carrier. This enabled increasing the sensitivity

20591

S/109/61/006/002/023/023
E073/E335

Determination of

of the method. For purifying the iodine a few drops of the aqueous iodine solution were mixed with benzol and the latter was separated from the water. Then a certain quantity of the stable iodine carrier was added so as to create the necessary vapour pressure in the experimental lamp. The solution of iodine in the benzol was placed into a glass tube with 4-5 intakes and this was followed by vacuum distillation of the iodine. The last part of the tube, where the iodine finally condensed, contained a sealed capillary with a striker. Before distillation of the iodine, the entire tube was carefully de-gassed and following that the tube with the radioactive iodine was welded onto the experimental tube. The experimental tube consisted of a diode with a disc cathode of 5 mm diameter and a flat anode. The base material was 99.99% Ni, annealed in vacuum. The cathode coating consisted of 55% BaCO_3 , 45% SrCO_3 with an organic binder. The thickness of the coating was about 100-120 μ ; activation of the cathode was in vacuum of at least 5×10^{-5} mmHg in two stages; in the first stage the temperature reached 1050 °C with a short-

X

Card 2/5

20591

S/109/61/006/002/023/023
E073/E335

Determination of

duration drawing-off of the emission current. Under static conditions the current intensity reached 300 - 500 mA/cm². Following that, the cathode was cooled and the tube was sealed in a vacuum of 10⁻⁷ mm Hg. Immediately after sealing, the capillary tube was broken off and iodine vapour penetrated into the tube which was placed into a furnace at 100-120 °C for a few hours, following which the furnace temperature was increased to 200 °C, whilst the end of the ampule was cooled. As a result, the total free iodine was collected in one spot of the instrument. Then the tube was opened and the radioactivities of the anode and cathode were determined. For studying the distribution of the radioactivity along the depth of the oxide layer, the cathode was coated with paraffin wax and, by means of a special device, 10-μ thick layers were cut. From the quantity of iodine in the oxide coating, the quantity of free barium can be easily determined. On the average, the quantity of free barium in the cathodes amounted to 5 x 10⁻⁷ g, corresponding to a concentration of about 0.05%

Card 3/5

20591

Determination of

S/109/61/006/002/023/023
E073/E335

in weight of the entire layer. In addition, the presence of 3×10^{-8} g of free barium was detected on the surface of the anode, which is turned towards the cathode. For determining the iodine sorption in the oxide layer check tests were carried out, using tubes with two oxide cathodes and two anodes. One of the cathodes was activated until a stable emission was obtained, after which oxygen at a pressure of a few atm. was fed in. A few hours later, the tube was again evacuated and the second cathode was activated and, following that, normal measurements were carried out with radioactive iodine. The quantity of free barium in the unpoisoned cathode was near to the value given above, whilst on the poisoned cathode it did not exceed 10^{-9} g and on the poisoned anode it did not exceed 5×10^{-10} g. The obtained results indicate that the sorption of iodine in the oxide layer is lower by two orders of magnitude than the quantity of iodine that is combined with free barium in the layer. Data on the distribution of free barium in the oxide layer indicate an

Card 4/5

20591

S/109/61/006/002/023/023
E073/E335

Determination of

increase in its concentration from the surface into the core. The quantity of free barium on the anode is apparently lower and this seems to be due to the fact that under vacuum conditions a certain part of the free barium that evaporates from the cathode combines with the residual gases. As a result of using labelled atoms for determining the free barium concentration in oxide cathodes it can be stated that this method is more sensitive by two orders of magnitude than any other known method.

(Abstractor's note: this is a complete translation.)
There are 2 Soviet references.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet
Kafedra elektrofiziki (Tashkent State
University, Department of Electrophysics)

SUBMITTED: July 6, 1960

Card 5/5

10101

S/109/62/007/009/010/018
D409/D301

9,3120
26.2531

AUTHOR: Vasil'yev, V.P.

TITLE: Study of oxide cathodes by the method of radioactive tracers

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 9, 1962,
1574 - 1578

TEXT: The radioactive isotopes Ba^{131} and C^{14} were used for studying the decomposition of the carbonates of oxide cathodes ($BaCO_3 + SrCO_3$). In the experiments with C^{14} , the radioactive barium-carbonate $BaC^{14}O_3$ was added. The experimental lamp contained, in addition to the cathode and anode, a heater, a thermocouple, and an absorber (of type BaTi). The decomposition took place in 8 stages, each lasting 15 minutes. Thereby the cathode was heated from room temperature to $10000^{\circ}C$. The emission current was of the order of 20-50 mA. The radioactivity was recorded by means of a counter of type БФЛ-Т-25 (BFL-T-25). In order to study the evaporation of barium

Card 1/2

Study of oxide cathodes by the ...

S/109/62/007/003/010/018
D409/D301

from the oxide cathode, the radioactive isotope Ba^{131} was used, (in the form of $Ba^{131}CO_3$). The experimental apparatus was similar to that used for C^{14} . The experiments with C^{14} showed that the release of CO and CO_2 from the oxide cathode begins at very low temperatures, of the order of $200^\circ C$. As the temperature increases to $600^\circ C$, the activity at the anode and collectors "fluctuates", i.e. it increases and decreases alternately. This is apparently due to two factors: the release of adsorbed gases, and changes in the "instantaneous" temperature of the cathode. Above $600^\circ C$, intense decomposition of the carbonates takes place (with the release of CO_2); but strong evaporation at the collector starts only at $800^\circ C$.

The carbon compounds are deposited on the cold electrodes in the form of separate particles; this process, too, starts at $200^\circ C$. The evaporation of barium in considerable amounts starts at temperatures of $400-600^\circ C$; it is also in the form of separate particles. There are 4 figures.

SUBMITTED: March 19, 1962

Card 2/2

ABBASOV, A.S.; NIKOL'SKAYA, A.V.; GERASIMOV, Ya.I.; VASIL'YEV, V.P.

Thermodynamic properties of gallium tellurides studied by the
electromotive force method. Dokl. AN SSSR 156 no. 5:1140-1142
Je '64. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Gerasimov).

VASIL'YEV, V.P.; VASIL'YEVA, V.N.

Entropy and isobaric potential of the lattice of compounds
with multiatomic anions. Zhur. fiz. khim. 36 no.11:2517-
2520 N'62. (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskoy institut.

ALESKOVSKIY, V.B., prof.; BARDIN, V.V.; BOYCHINOVA, Ye.S.;
BULATOV, M.I.; VASIL'YEV, V.P.; DOBYCHIN, S.L.; DUSHINA,
A.P.; KALINKIN, I.P.; KEDRINSKIY, I.A.; LIBINA, R.I.;
PRIK, K.Ye.; SETKINA, O.N.; KHEYFETS, Z.I.; YATSIMIRSKIY
K.B., prof.; VASKEVICH, D.N., red.

[Physicochemical methods of analysis ; a laboratory manual]
Fiziko-khimicheskie metody analiza; prakticheskoe rukovod-
stvo. Moskva, Khimiia, 1964. 451 p. (MIRA 17:12)

VASIL'YEV, V.F.; MUKHINA, P.S.

Equilibria in aqueous solutions of thiocyanate complexes of
uranyl. Izv. vys. ucheb. zav.; khim. i khim. tekhn. 7 no. 5:
711-714 '64 (MIRA 18:1)

1. Kafedra analiticheskoy khimii Ivanovskogo khimiko-tekhnologicheskogo instituta.

ACC NR: AP 7001723

SOURCE CODE: UR/0048/66/030/012/1930/1934

AUTHOR: Vasil'yev, V.P.; Lutsenko, I.M.

ORG: none

TITLE: Radioactive tracer investigation of the evaporation of barium oxide from different substrates [Report Twelfth All-Union Conference on the Physical Fundamentals of Cathode Electronics held at Leningrad, 22 - 26 Oct. 1965]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 12, 1966, 1930-1934

TOPIC TAGS: evaporation, barium, barium oxide, cathode, tracer study

ABSTRACT: The authors have employed radioactive Ba¹⁴⁰ as a tracer to investigate evaporation of Ba and BaO from barium-strontium-calcium oxide cathodes on nickel bases and from barium oxide cathodes on platinum, nickel, and molybdenum bases. The 5 mm diameter disk cathode containing Ba¹⁴⁰ was mounted below a rotatable molybdenum anode and the radioactivities of different parts of the anode were measured after exposure for different times to the hot cathode. Attempts to make use of the supplementary adsorption of radioactive I¹³¹ by adsorbed Ba to distinguish between evaporation of Ba and BaO from nickel base cathodes failed because of competition for the I¹³¹ by adsorbed nickel originating in the cathode base. The other base materials did not significantly adsorb iodine, however, and for these bases the Ba and BaO

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ACC NR: AP 7001723

evaporation rates were separately determined. The evaporation rate decreased rapidly with time and approached an equilibrium rate which in the case of the Ba-Sr-Ca cathode was reached after about 16 hours at 800° C, 5 hours at 900°, and 3 hours at 1000°. The evaporation rate was proportional to $\exp(-E/kT)$, where T is the temperature and $E/k = 19\,000^\circ$. This value of E/k is not far from that found by B.P.Nikonov and N.G.Otmakhova (Zh. fiz. khimii, 35, No.7, 1494 (1961)). The actual BaO evaporation rates were in all cases lower than those found by other investigators; it is suggested that this may be due to the high density of the present coatings. The BaO evaporation rate was lowest from the Pt base (or, at least 1000°, from the Ni base) and highest from the Mo base. The evaporation rate of excess (uncombined) Ba from the Mo base also increased with increasing temperature. Anomalous changes in the excess Ba evaporation rate at fixed temperature were noted and are ascribed to side effects. The fact that excess barium appears on the active molybdenum base is not subject to doubt, but the mechanism of the interaction between the base and the oxide is not understood. The authors thank B.P.Nikonov for suggesting the topic and for assistance with the work. Orig.art. has: 1 formula, 4 figures and 2 tables.

SUB CODE: 20

SUBM DATE: None

ORIG. REF: 010

OTH REF: 001

Card 2/2

VASIL'YEV, V.P.; VASIL'YEVA, V.M.

Effect of temperature on the change of entropy in the course
of complex-forming reactions in the gas phase. Zhur.fiz.khim.
39 no.11:2678-2683 N '65. (MIRA 18:12)

1. Ivanovskiy khimiko-tekhnologicheskii institut.

VASIL'YEV, V.P.; GRECHINA, N.K.

Equilibria in aqueous solutions of iodide complexes of
cadmium. Zhur. neorg. khim. 9 no.3:647-653 Mr '64.
(MIRA 17:3)

1. Ivanovskiy khimiko-tehnologicheskii institut.

VASIL'YEV, V.P.; VASIL' YEVA, V.N.

Entropy of halide complexes in the gas phase. Zhur. fiz. khim.
37 no.5:1089-1094 My '63. (MIRA 17:1)

1. Ivanovskiy khimiko-tekhnologicheskii institut.

Thermodynamic properties of indium arsenide. A. A. Abbasov, A. V. Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic properties of gallium arsenide. A. A. Abbasov, A. V. Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic investigation of the system gallium-tellurium.
A. A. Abbasov, A. V. Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic properties of aluminum antimonide. V. A. Geyderikh,
A. A. Vecher, Ya. I. Gerasimov.
(Presented by A. V. Nikol'skaya--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

VASIL'YEV, V. P.

"Study of Pyrophosphate Groups in Solutions." Min. Higher Education USSR, Ivanovo
Chemical Engineering Inst., Ivanovo, 1954. (Dissertation for the Degree of Candidate
of Chemical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

14-00000
VASIL'YEV, V.P.; YATSIMIRSKIY, K.B.

On E.A.Ukshe and A.I.Levin's article "Composition and properties of a complex electrolyte in a copper-pyrophosphate bath." Zhur. ob.khim.25 no.6:1233-1235 Je '55. (MIRA 8:12)

1. Ivanovskiy khimiko-tekhnologicheskii institut.
(Electrolytes) (Ukshe, E.A.) (Levin, A.I.)

PO- NIPOLW and the 27, 28, 29, and 30 (NO) of

VASIL'YEV, V. P.
USSR/Chemical - Physical chemistry

Card 1/1 Pub. 147 - 4/35

Authors : Yatsimirskiy, K. B., and Vasil'yev, V. P.

Title : Determination of instability constants of complexes by colorimetric measurement of the pH of the solution

Periodical : Zhur. fiz. khim. 30/1, 23-33, Jan 1956

Abstract : A new method was developed for colorimetric determination of pH in highly dilute sodium pyrophosphate solutions. The method was tested on several series solutions containing calcium nitrate and sodium pyrophosphate and was found to be perfectly suitable for such type of measurements. The instability constant of a calcium pyrophosphate complex was computed on the basis of results obtained by this new method. Five references: 3 USSR and 2 USA (1928-1954). Tables; graph.

Institution : Chemicotechnological Institute, Ivanovo

Submitted : March 14, 1955

VASIL'YEV, V. P.

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29880.

Author : Yatsimirskiy K. B., Vasil'yev V. P.

Inst : not given *Sverdlovsk Chem Tech. Inst.*

Title : Thermochemistry of Pyrophosphate Complexes in Solution

Orig Pub: Zh. fiz. khimii, 1956, 30, No 4, 901-911

Abstract: Determination of the heat of mixing values of solutions of nitrates of Ni, Cu, Zn and Pb with solutions of sodium pyrophosphate of different concentration, and also of the heat of dilution of the above-stated salts. The determinations were carried out in the previously described calorimeter (RZhKhim, 1955, 32011) which has been improved by the authors. From changes in heat of mixing value, with change in concentration of sodium pyrophosphate solution, the stepwise constant of instability of $\text{Ni}(\text{P}_2\text{O}_7)^{4-}$ was calculated. Enthalpy change (ΔH) in the reaction $\text{Ni}^{2+} + \text{P}_2\text{O}_7^{4-} = \text{NiP}_2\text{O}_7^{2-}$ (1) is 4.21 ± 0.04 kcal.

Card : 1/2

-10-

Category: USSR / Physical Chemistry.
Thermodynamics. Thermochemistry. Equilibrium. Physico-
chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29880

Author : Yatsimirskiy K. B., Vasil'yev V. P.
Inst : not given

In reactions of the type $M^{2+} + 2P_2O_7^{4-} \rightleftharpoons M(P_2O_7)_2^{4-}$ (2)
the ΔH for Ni, Cu, Zn and Pb is, respectively, 2.00 ± 0.02 ;
 -0.67 ± 0.07 ; 2.64 ± 0.05 and -1.01 ± 0.11 . Values of standard
heat of formation have been calculated for the complex ions $NiP_2O_7^{4-}$
and $M(P_2O_7)_2^{4-}$ (M -- Ni, Cu, Zn and Pb). For reactions of type (2)
change of isobaric thermodynamic potential and entropy have been
calculated. Entropy change in these reactions satisfies the equa-
tion: $\Delta S = 0.1 L_h + \text{const}$ (3), where L_h is heat of hydration of
 M^{2+} ion. Equation (3) is utilized to calculate the instability
constant of $Pb(P_2O_7)_2^{4-}$ ion, together with the thermochemical
data.

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5(2) 5(4)
AUTHOR:

Vasil'yev, V.P.

SOV/153-58-2-29/30

TITLE:

On the Problem of the Dissociation of the Aquo-Complexes
(K voprosu o dissotsiatsii akvokompleksov)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
tekhnologiya, 1958, Nr 2, pp 186 - 188 (USSR)

ABSTRACT:

The solvation phenomena of ions produce wide effects on the course of most diverse reactions in the solution especially of complex formation and precipitation. It is maintained that a complete or partial desolvation of the reacting particles in this connection forms an unavoidable stage. By investigating several factors determining the interaction energy of the ion with water molecules and of the ion with charged addenda Yatsimirskiy (Ref 1) succeeded in explaining the modification of the stability of complexes in the series magnesium, calcium, strontium, barium in aqueous solution. From these and other facts (Refs 2,3) it may be concluded that the stability of the complexes in the solution is not only determined by the affinity of the central ion to the addenda but also by the affinity of these particles to the molecules of the solvent. In this connection the determination of the composition and the dissociation stability of the aquo-complexes is at least an approximate estimation

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On the Problem of the Dissociation of the Aquo-Complexes SOV/153-58-2-29/30

of this quantity. According to the opinion of the authors the investigation of the polarographic characteristics of the ions in non-aqueous and mixed solutions gives a clue since solvation must be regarded as a special case of the complex formation in the solution. The author controverts Markman and Tur'yan (Ref 4) who used the Brodskiy equation for the explanation of the displacement of the semi-wave potential in the direction of the positive values with increasing alcohol content in solutions of cadmium, lead and thallium nitrates. The author is of the opinion that this shifting can be explained also by another way. The curves on figure 1 reveal that in the concentration range investigated a step-like complex formation takes place (the points are not on a straight line) i.e. that several aquo-complexes occur in the solution. For the determination of their composition and their stability the author used the Yatsimirskiy method (Ref 6). It can be seen on figure 1 that in the cases of cadmium 3, lead 4, and thallium only 2 tangents with values of $(p + 1/2)$ can be plotted. In all 3 cases mentioned he gives the empiric formulae of the corresponding aquo-complexes (4 for cadmium, 5 for lead, and 3 for thallium) their instability constants included. Thus the applicability of the polarographic method of determining the composition and the instability constants

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of the aquo-complexes in the solution was proved. Coordination numbers were determined and the step-like instability constants of the mentioned metals in water-alcohol solutions were estimated. There are 1 figure and 6 Soviet references.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskii institut
(Ivanovo Chemical and Technological Institute)
Kafedra analiticheskoy khimii (Chair of Analytical Chemistry)

SUBMITTED: November 26, 1957

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5(4)

AUTHORS:

Vasil'yev, V. P., Korableva, V. D.,
Yatsimirskiy, K. B.

SOV/153-58-3-30/30

TITLE:

Conference Discussion on the Methods of Investigating the
Complex Formation in Solutions (Soveshchaniye-diskussiya
po metodam izucheniya kompleksobrazovaniya v rastvorakh)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1958, Nr 3, pp 173 - 174 (USSR)

ABSTRACT:

From February 18 to 21, 1958 a conference discussion took
place at the town of Ivanovo; it dealt with the subjects
mentioned in the title. It was called on a decision of the
VIIth All-Union Conference on the Chemistry of Complex
Formations. More than 200 persons attended the conference,
among them 103 delegates from various towns of the USSR.
At the conference methods of determining the composition of
the complexes in solutions were discussed, as well as the
methods of calculating the instability constants according
to experimental data and problems concerning the influence
of the solvent upon the processes of complex formation.
I. I. Chernyayev, Member, Academy of Sciences, USSR, stressed
in his inaugural lecture the great importance and actuality

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of the problems to be dealt with, and wished the conference all the best in its work. I. V. Tananayev, on behalf of the Orgkomitet (Organization Committee) held a lecture on: "The Method of Determining the Composition of Compounds Formed in Solutions". In his lecture, V. N. Tolmachev dealt with the problem of the graphical interpretation of the method by Ostromyslenskiy-Zhob. It was proved that this method can also be used in such cases where the equilibrium of complex formation was turned complex by the hydrolysis or dimerization of the central ion. In the lecture by A. K. Babko and M. M. Tananayko, "Physical and Chemical Analysis of the Systems With 3 Colored Complexes in the Solution", the results of a systematic investigation in copper-quinoline-salicylate, as well as in copper-pyridine-salicylate systems by means of the optical method were dealt with. In the lecture by Ya. A. Fialkov the idea of a further investigation of the complex formation processes in solutions was developed. Besides the determination of the composition and stability of the complexes also the physical and chemical properties, the chemical nature and the structure of the complex compounds must be investi-

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Investigating the Complex Formation in Solutions

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gated. The lecture by K. B. Yatsimirskiy dealt with the conditions of checking the usefulness of the method of isomolar series in the determination of the complex composition. To be able to obtain objective results the position of the maximum at various concentrations of the components must be checked. A. K. Babko made several critical remarks concerning the lecture by I. V. Tananayev. He pointed out that such a method of investigation must be chosen that is connected with the characteristic properties of the system investigated. A. P. Komar' mentioned in his lecture that for the time being the method by Ostromyslenskiy-Zhob is the best for determining the complex composition, and should be employed as often as possible. This demands, however, that all instructions concerning this method are strictly obeyed. I. S. Mustafin, L. P. Adamovich and V. I. Kuznetsov took part in the discussion. K. B. Yatsimirskiy proved in his lecture "Hydrolytic Equilibria and the Polymerization in Solutions" that, if the hydrolysis products are polymerized, the "inclusion into the complex" and the "formation function" at a constant pH value are varied with the modification of the total concentration of

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the metal. Therefore all those methods may be employed for investigating the polymerization of this type which make the determination of at least one of the two functions mentioned possible. It was proved that the hypotheses on the existence of complexes of the type "nucleus + chain members" can also be founded from the viewpoint of structural concepts: particles the charge of which does not exceed unity can occur as "chain members". The usefulness of the characterization of areas of existence of polymers by means of surface diagrams: "total concentration of the metal - pH" was proved as well. I. I. Alekseyeva and K. B. Yatsimirskiy in their lecture "Investigation of the Polymerization of Iso-Poly Acids in Solutions" mentioned experimental results of the investigation of the polymerization in solutions of molybdic acid. The authors proved that especially the molybdic acid within a certain range of the pH values and the concentrations exists as a number of compounds that can be expressed by an overall formula $\text{MoO}_4(\text{HMoO}_4)^{n-2}$. In the lecture by N. V. Aksel'rud and V. B. Spivakovskiy investigation results on basic salts taking into

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